

Title (en)  
VARIABLE FORCE VALVE SPRING

Title (de)  
VENTILFEDER MIT VARIABLER KRAFT

Title (fr)  
RESSORT DE SOUPAPE À FORCE VARIABLE

Publication  
**EP 2668378 A1 20131204 (EN)**

Application  
**EP 12739579 A 20120127**

Priority

- US 201161436739 P 20110127
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Abstract (en)  
[origin: US2012192817A1] Devices and related methods are disclosed that generally involve variable force valve springs for controlling the motion of an engine valve. The force exerted by the valve spring can be adjusted by altering the pressure at which a fluid is supplied to a fluid chamber thereof, by altering the volume of the fluid chamber, and/or by changing the aggregate surface area over which fluid pressure is coupled to the engine valve. Associated fluid control systems are also disclosed herein, as are various methods for adjusting the force of a valve spring based on a variety of engine parameters, such as engine speed, engine load, and/or a combination thereof.

IPC 8 full level  
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CPC (source: EP US)  
**F01L 1/465** (2013.01 - EP US); **F01L 3/10** (2013.01 - EP US); **F01L 3/22** (2013.01 - EP US); **F02B 33/22** (2013.01 - EP US); **F01L 2003/258** (2013.01 - EP US); **Y10T 29/49247** (2015.01 - EP US)

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